Instructor: Steven S. Saliterman, MD, FACP

Office Hours: E-mail to schedule time and location.

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Teaching Assistant: Michael Eggen
Office Hours: call or e-mail to arrange
Location:
Phone:
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Lecture Time: 3:35 p.m. – 5:30 p.m., Thursdays

Lecture Location: MCB 2-122

Course Website: www.tc.umn.edu/~drsteve

Course Objectives: Students will become acquainted with the following topics:
- Microfabrication of silicon, glass and polymer devices.
- Microfluidics and electrokinetics.
- Sensors, actuators and drug delivery systems.
- Micro total analysis systems (µTAS) and lab-on-a-chip devices (LOC).
- Clinical laboratory medicine.
- Detection and measuring systems.
- Genomics, proteomics, DNA and protein microarrays.
- Emerging applications in medicine, research and homeland security.
- Packaging, power systems, data communication and RF safety.
- Biocompatibility, FDA and ISO 10993 biological evaluations.

Prerequisites: Upper senior or graduate level

Required Textbook: Fundamentals of BioMEMS and Medical Microdevices by Steven S. Saliterman (see website)

Optional Reading: Textbook recommendations on website
Examination: Midterm:  
Final: 

Homework: Reading Assignments – 40 pages/week 

Class Time: 85% lecture, 10% discussion, 5% Tour of the Nanofabrication Center and Characterization Facility. 

Paper: None 

Project: These are group presentations. Research any aspect of interest in BioMEMS, such as proposing a BioMEMS device, and present as a 10-20 min. Power Point presentation (no paper is necessary). Include discussion of the application, device design, fabrication techniques, testing and if appropriate, biocompatibility. Include references, and be prepared to discuss. 

Grading:  
Midterm Exam: 40% 
Project: 10% Presentation 
10% Participation 

Final Exam: 40% 

Special grading consideration will be given to undergraduate students in the course. 

The examinations are essay style, and not open book. Do no bring study materials or calculators into the examination room. 

Academic Dishonesty: 
University Policy 
Dishonesty may result in failure of the exam, course and suspension from the University.